

### REMARKS

By this Response, no amendments to the claims or specification have been made. Claims 3, 5-8, 10-11, 13-14, 16, 20, 22-37, 49, 41-43, 46-50, 52-54 and 56-66 were previously canceled. Thus, Claims 1-2, 4, 9, 12, 15, 17-18, 21, 38, 40, 44-45, 51, 55 and 67-70 are pending in this application.

#### 35 U.S.C. & 103(a) Rejections

Claims 1, 4, 9, 12, 15, 17, 21, 38, 40, 51, 55, and 67-70 have been rejected by the Examiner under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,474,082 (Junker) in view of Smotroff [Business Wire, sl, p1,6/16/95]. In particular, the Examiner states:

For claim 1, the apparatus for controlling a computer operation based on at least one stimulus sensed from a user taught by Junker includes the following claimed subject matter, as noted, 1) the claimed stimuli input means is met by the electrodes (No. 22) coupled to the user (No. 10) for detecting at least one stimulus being caused by the thought of the user, 2) the claimed computer having an operating system is met by the control system (No. 29) having an operating system (No. 31) for processing said at least one stimulus to produce a function control signal to control the operation of the operating system without requiring the user to manipulate the user controls, 3) the claimed function selection means comprising a memory is met by the data store (No. 19) in which multiple brain-body signals are stored with each sample from the user. However, as for the identification means there is no evidence that the stimuli are compared to stored stimuli to identify a corresponding control function for a computer. Junker does store previous stimuli in connection with control functions and upon sensing stimuli uses this stored data to perform the control. The specific comparison is not set forth in Junker.

The "mind-control" software described in the Smotroff reference is a software program that enables a user to control a computer program using a figure-mounted sensor that monitors heart, temperature, blood-pressure volume, and electrical activity in the brain and transmits that information to an interface that plugs into a PC-compatible computer, which analyzes the data it receives and translates it into computer signals. The MindDrive software recognizes the distinctive signals produced by different mental activity. This is plain evidence that signals have been recognized by computer software and translated into information that the computer can recognize. Logically, the computer for later reference stores these stimuli patterns and the control functions are enacted based on the previously observed stimulus.

The system taught by Smotroff introduces a type of link between brain activity and computer control. This type of control is similar to the primary reference in that Junker also uses the sensing of brain activity to control a computer. The Smotroff reference compares brain stimuli to stored stimuli and performs the corresponding function. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate storing the data as computer functions similar to MindDrive for the purpose of utilizing a standard operating system that easily recognizes different input for different computer control. (Office Action, pp. 3-4).

Applicant respectfully disagrees for the following reasons.

Junker fails to disclose more than just the identification means as specified in Claim 1. Junker **also fails to disclose the function selection means**<sup>1</sup>, as the Board of Patent Appeals and Interferences concurred:

...Appellant argues at page 17 et seq. of the brief that **the function selection means and the identification means are not taught or suggested by Junker**. We agree with appellant, and do not find that the examiner has shown where or how Junker teaches **these claim limitations**...(emphasis added, pp. 5-6 of Decision on Appeal).

Thus, even if one skilled in the art were to combine Junker with Smotroff, the result would still not teach or suggest the present invention of Claim 1.

---

<sup>1</sup>...Junker does not include the following elements of Claims 1, 67 and 69 of the present application:

(1) function selection means for receiving said at least one stimulus and wherein said function selection means comprises a memory including a correspondence between a plurality of previously-stored user stimuli and a plurality of desired function control signals;

(2) identification means, coupled to said function selection means, for comparing said at least one stimulus to said correspondence to identify a function control signal corresponding to said at least one stimulus, said function control signal being transmitted to the operating system of said computer.

Neither of these elements are shown in Junker. With respect to the assertion that the function selection means comprising a memory is met by the data store 19 of Junker in which brain-body signals are stored, Junker does not show nor suggest a correspondence between a plurality of previously stored user stimuli and a plurality of desired control functions. In fact, the only thing that Junker states about the data store 19 is the following: "The digital brain-body signal is stored in data store 19 with each sample." (Junker, col. 7, lines 2-3). "The data store 19 stores data associated with the execution of programs within the background loop processor 35 and foreground loop processor 39. (Junker, col. 7, lines 42-45). [Appellant's Brief, p.18.]

Smotroff is simply a one page product announcement for unveiling and promoting the MindDrive computer game, i.e., MindSkier. It should be known that Applicant previously made the MindDrive computer game of record in the original Information Disclosure Statement filed on June 19, 1997 ("Mind Reading-Fact or Fiction"), along with U.S. Patent No. 5,016,213 (Dilts, et al., which is cited on the MindDrive literature and a copy of which is attached as Exhibit A), and which the Examiner did consider on November 18, 1997<sup>2</sup>. Moreover, Applicant distinguished the present invention from both the MindDrive computer game and U.S. Patent No. 5,016,213 (Dilts, et al.) in the Background of the Invention of the present application<sup>3</sup>. Thus, not only does Smotroff **not** provide any scientific basis or any operational theory to make up for any deficiency in Junker regarding an identification means<sup>4</sup>, as suggested by the Examiner, but detailed literature that is directed to the MindDrive computer game, namely, U.S. Patent No. 5,016,213 (Dilts, et al.) has already been distinguished from the present invention. Thus, it follows that if a more detailed description of the MindDrive computer game, i.e., U.S. Patent No. 5,016,213 (Dilts, et al.), can be distinguished from the present invention, then certainly a one page product announcement, Smotroff, that lacks such detail, by definition, is also distinguished from the present invention.

---

<sup>2</sup>Office Action, dated December 2, 1997.

<sup>3</sup> Another reference that is related to controlling a computer based on user physiology is U.S. Patent No. 5,016,213 (Dilts et al.) which discloses a method and apparatus for controlling the position of an image on the screen of a computer using galvanic skin response (GSR), also known as Psycho galvanic reflex (PGR) or electrodermal reflex (EDR). In particular, the system teaches the introduction of a GSR amplifier circuit that couples to the game paddle port of a conventional computer, e.g., an Apple II computer. The GSR amplifier circuit is contained within a housing having GSR contacts that are located on the exterior of the housing for the user. When the user applies a finger to the GSR contacts, the GSR amplifier circuit utilizes the skin resistance available at the GSR contacts to create an electrical signal that changes in sense and amplitude directly with changes in the resistance sensed between the GSR electrodes. Furthermore, there is a product sold under the mark MINDRIVE™, by The Other 90% Technologies, Inc.™ of San Rafael, CA 94912-2669 which is believed to include a number of the features disclosed in U.S. Patent No. 5,016,213 that is available for use with home computers. Among other things, MINDRIVE™ permits the user to operate a ski simulator, create art, a flight simulator, etc., on the computer using the GSR method. Conversely, TCS teaches the selection and utilization of one individual stimulus or more stimuli and considers the actual thoughts of the user. Present application, page 12, line 15 to page 13, line 10.

<sup>4</sup>Nor for any function selection means either.

However, for completeness, Applicant addresses the deficiencies of the Smotroff, as well as U.S. Patent No. 5,016,213 (Dilts, et al., hereinafter "Dilts"), and in view of Junker, as follows.

Smotroff often uses the word "thought" and paints a picture to entice potential customers to perceive MindDrive as having the capability to detect particular thoughts for any type of control. But under further examination of Smotroff, MindDrive is a loop-structured system. In particular, Dilts, as cited on the MindDrive literature which is mentioned by Smotroff, discloses a device that continuously monitors electrodermal responses and continuously extracts the time rate of change of these responses using an analog network and amplifier without regard to, or knowing, the cursor's position. This skin-sensed time rate of change varies a resistance value for simulating a mouse in order to play a computer game. Dilts then transmits the **time rate of change information**, by simulating a computer mouse, to a computer. The game accordingly displays the effect of the user's electrodermal time rate of change in terms of moving an object on the computer screen. The MindDrive software within the PC-compatible computer is a "game-type" or a "mouse-type" software well-known in the art. This software is the recipient **only** of simulated mouse inputs which were derived from the time rate of change of electrodermal responses from the user. Viewing the object, the individual experiments with his/her eyesight, body movement and concentration to cause the object to move as desired. This interaction or feedback is commonly known as a loop-structured system.

Dilts has no capability nor suggestion to pre-store biological states or even pre-store electrodermal stimuli or even relate to specific electrodermal states in order to identify specific thoughts.

...applicant's apparatus is designed to continuously adjust the signal representative of the electrodermal response...(Dilts, col. 6, lines 31-33).

Further, there is no mention by Dilts of a computer storing earlier electrodermal stimuli. Dilts presents the details of the GSR (galvanic skin response) amplifier 26 which performs the detection

of time rate of change emanating from an iterative loop structure of electrodermal responses for a cursor to be readjusted. Dilts has no interest in psychological states. In particular,

...According to applicants' invention, the particular general or overall psychological state of the human individual using the apparatus is totally unimportant. (Dilts, col. 6, lines 59-64).

Dilts also has no means to store user stimuli nor a plurality of desired function control signals. This is to ensure his independence of any time delay; in fact, the time rate of readjustment action of the average time rate of change of electrodermal responses.

...the RC network 34 has a time constant slightly less than one-half second. Such time constant approaches the average reaction time...to visual stimuli... (Dilts, col. 11, lines 11-14).

Thus, because there is no storage of any plurality of previously-stored user stimuli and a plurality of desired function control signals, there is no function selection means taught or suggested by Smotroff nor by Dilts. Nor is there any identification means coupled to a function selection means that compares at least one stimulus to the correspondence to identify a function control signal corresponding to the at least one stimulus taught or suggested by Smotroff or Dilts. As mentioned previously, Dilts continually performs electrodermal response sensing and extracting of the time rate of change to control a resistance value which interfaces with a computer to move a cursor. Dilts, and therefore Smotroff, does not store nor compare to a predetermined thought. Thus, there is no evidence to logically conclude that Smotroff or Dilts stores stimuli patterns for later control of functions based on the computer's previously stored stimulus. Dilts analog amplifier network operates constantly on a loop structured basis with electrodermal sensing feedback from the user attempting to readjust the cursor position as he/she desires. The only computer program used is the

Application No. 08/835,625  
Response Dated February 14, 2004  
Reply to Office Action dated September 29, 2004

game software that processes the “mouse-type” game paddle variable resistance to fulfill the game requirements.

The Examiner’s characterization of MindDrive operation is not even supported by Smotroff. In particular, the Examiner states:

The “mind-control” software described in the Smotroff reference is a software program that enables a user to control a computer program using a figure-mounted sensor *that monitors heart, temperature, blood-pressure volume, and electrical activity in the brain* and transmits that information to an interface that plugs into a PC-compatible computer, which analyzes the data it receives and translates it into computer signals. The MindDrive software recognizes distinctive signals produced by different mental activity. (Emphasis added, Office Action, p. 3, lines 16-22).

Nowhere in Smotroff does it teach that the finger sensor monitors these parameters<sup>5</sup>. And further, as stated previously, Dilts even admits that it is not clear as to what are the causes of electrodermal resistance change:

[Regarding] measuring and recording electrodermal response accompanying emotional and ... response accompanying psychologically induced stress ... although much is known about *electrodermal response*, much *information is still lacking* as to the variables affecting such response. (emphasis added, Dilts, col. 3, line 67 to col. 4, line 7)

and

...both plants and animals have been found to have *autonomic* systems controlling their electrodermal response for purposes which are *not fully understood*. (emphasis added, Dilts, col. 1, lines 22-25).

Thus, the Examiner’s assertion that the MindDrive software “recognizes the distinctive signals produced by different mental activity and that the computer stores “stimuli patterns” (where is that even mentioned in Smotroff?) and that “the control functions are enacted based on the previously observed stimulus” are not taught anywhere in Smotroff. There is no teaching about comparing

---

<sup>5</sup>Dilts only mentions body temperature, respiration rate and heart beat in the Background of the Invention (Dilts, col. 1, lines 20-21) and also mentions that if a higher gain is used in the invention that the heart beat can also be detected (Dilts, col. 12, lines 64-66).

brain stimuli to stored stimuli anywhere in Smotroff nor in Dilts. Thus, Applicant submits that Smotroff or Dilts provides for no such teaching suggested by the Examiner and therefore does not make up for any deficiencies in Junker to obviate the invention of the present application. Applicant respectfully submits that Claim 1 is patentable over the art of record and respectfully requests that the §103(a) rejection be withdrawn.

Claim 4 is dependent upon Claim 1 and is patentable for the same reasons.

Claim 9 is dependent upon Claim 1 and is patentable for the same reasons.

Claim 12 is dependent upon Claim 1 and is patentable for the same reasons.

Claim 15 is dependent upon Claim 1 and is patentable for the same reasons.

Claim 17 is dependent upon Claim 1 and is patentable for the same reasons.

Claim 21 is dependent upon Claim 1 and is patentable for the same reasons.

Claim 38 is dependent upon Claim 1 and is patentable for the same reasons.

Claim 40 is dependent upon Claim 1 and is patentable for the same reasons.

Claim 51 is dependent upon Claim 1 and is patentable for the same reasons.

Claim 55 is patentable for the same reasons discussed previously with respect to Claim 1.

Claim 67 is patentable for the same reasons discussed previously with respect to Claim 1.

Claim 68 is patentable for the same reasons discussed previously with respect to Claim 1.

Claim 69 is patentable for the same reasons discussed previously with respect to Claim 1.

Claim 70 is patentable for the same reasons discussed previously with respect to Claim 1.

The Examiner has rejected Claim 2 under 35 U.S.C. §103(a) as being unpatentable over Junker in view of Smotroff as applied to Claim 1 above and further in view of U.S. Patent No. 5,594,849 (Kuc et al, hereinafter "Kuc"). However, Applicant submits that Claim 2 is dependent upon Claim 1 and is patentable for the same reasons. In addition, Junker is directed to the recognition that an aggregate signal of EEG and EMG biopotentials which is necessary for proper feedback and which is limited to interpreting frequency spectra detected on the body. Junker does not teach or even suggest implementing localization, i.e., determining coordinates of stimuli

Application No. 08/835,625  
Response Dated February 14, 2004  
Reply to Office Action dated September 29, 2004

generated by the thoughts of the user, as is accomplished by the stimuli input means of the present invention which can be achieved using magnetic source imaging, such as that suggested by Kuc. Thus, there is no incentive to even combine Junker with Kuc other than to use the present invention as a template<sup>6</sup>. Furthermore, the Board of Patent Appeals and Interferences has decided that the Examiner has not established a prima facie case of obviousness on this rejection:

...We agree with appellant that the examiner has not established a convincing line of reasoning why it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the diagnostic imaging of Kuc (or imaging of Adachi) with the biofeedback control system of Junker. Nor has the examiner established how the teachings of Kuc (or Adachi) overcome the deficiencies in Junker. Therefore, we find that the examiner has not established a *prima facie* case of obviousness, and we will not sustain the rejection of claims 2, 44 and 45. (Decision of Appeal, p. 6)

Therefore, for all of the above reasons, Applicant respectfully submits that Claim 2 is patentable over the art of record and respectfully requests that the §103(a) rejection be withdrawn.

The Examiner has rejected Claim 18 under 35 U.S.C. §103(a) as being unpatentable over Junker in view of Smotroff as applied to Claim 1 above and further in view of U.S. Patent No. 4,949,726 (Hartzell, et al, hereinafter "Hartzell"). However, Applicant submits that Claim 18 is dependent upon Claim 1 and is patentable for the same reasons. In addition, the Examiner fails to address the further limitation of Claim 18 that states that the user unique stimuli are usable by the computer for security or identification of users. Nowhere does Hartzell, nor the combination of Junker and Hartzell, teach or suggest having a computer use these user unique stimuli for security or identification of users as specified in the present application on page 39, lines 5-17. Furthermore, the Board of Patent Appeals and Interferences has decided that the Examiner has not established a prima facie case of obviousness on this rejection:

---

<sup>6</sup>Applicant reminds the Examiner that the mere fact that the references cited may be modified or even combinable does not allow the PTO to meet its burden absent a suggestion in the cited art of the desirability of the modification or combination. Moreover, the PTO may not "use the claimed invention as an instruction manual or 'template' to piece together the teachings of the prior art so that the claimed invention is rendered obvious." In re Fritch, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992).



Application No. 08/835,625  
Response Dated February 14, 2004  
Reply to Office Action dated September 29, 2004

...We agree with appellant that the examiner has not established where Hartzell remedies the deficiency in Junker noted above. (See brief at pages 25-26). We agree with appellant that the examiner has not established where Hartzell teaches or fairly suggests why it would have been obvious to one of ordinary skill in the art at the time of the invention to use the computer for security or identification purposes. Nor has the examiner established how the teachings of Hartzell overcome the deficiencies in Junker. Therefore, we find that the examiner has not established a *prima facie* case of obviousness, and we will not sustain the rejection of claim 18. (Decision of Appeal, p. 7)

Therefore, for all of the above reasons, Applicant respectfully submits that Claim 18 is patentable over the art of record and respectfully requests that the §103(a) rejection be withdrawn.

The Examiner has rejected Claims 44-45 under 35 U.S.C. §103(a) as being unpatentable over Junker in view of Smotroff as applied to Claim 1 above and further in view of U.S. Patent No. 5,325,133 (Adachi, et al, hereinafter "Adachi"). However, Applicant submits that Claims 44-45 ultimately depend from Claim 1 and are patentable for the same reasons. In addition, the Board of Patent Appeals and Interferences has decided that the Examiner has not established a *prima facie* case of obviousness on this rejection:

...We agree with appellant that the examiner has not established a convincing line of reasoning why it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the diagnostic imaging of Kuc (or imaging of Adachi) with the biofeedback control system of Junker. Nor has the examiner established how the teachings of Kuc (or Adachi) overcome the deficiencies in Junker. Therefore, we find that the examiner has not established a *prima facie* case of obviousness, and we will not sustain the rejection of claims 2, 44 and 45. (Decision of Appeal, p. 6)

Therefore, for all of the above reasons, Applicant respectfully submits that Claims 44-45 are patentable over the art of record and respectfully requests that the §103(a) rejection be withdrawn.

For at least the reasons set forth above, it is respectfully submitted that the above-identified application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are respectfully requested.

Application No. 08/835,625  
Response Dated February 14, 2004  
Reply to Office Action dated September 29, 2004

Should the Examiner believe that anything further is desirable in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

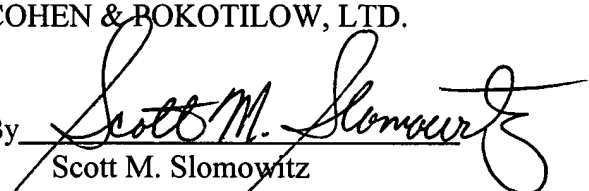
Respectfully submitted,

CAESAR, RIVISE, BERNSTEIN,  
COHEN & POKOTILOW, LTD.

February 14, 2005

Please charge or credit our Account  
No. 03-0075 as necessary to effect  
entry and/or ensure consideration of  
this submission.

By

  
Scott M. Slomowitz  
Registration No. 39,032  
Customer No. 03000  
(215) 567-2010  
Attorneys for Applicant

BEST AVAILABLE COPY

**Drive**  
M

# **Minidrive™**

*The first computer product operated by human th*

United States Patent Number: 5,016,213

